

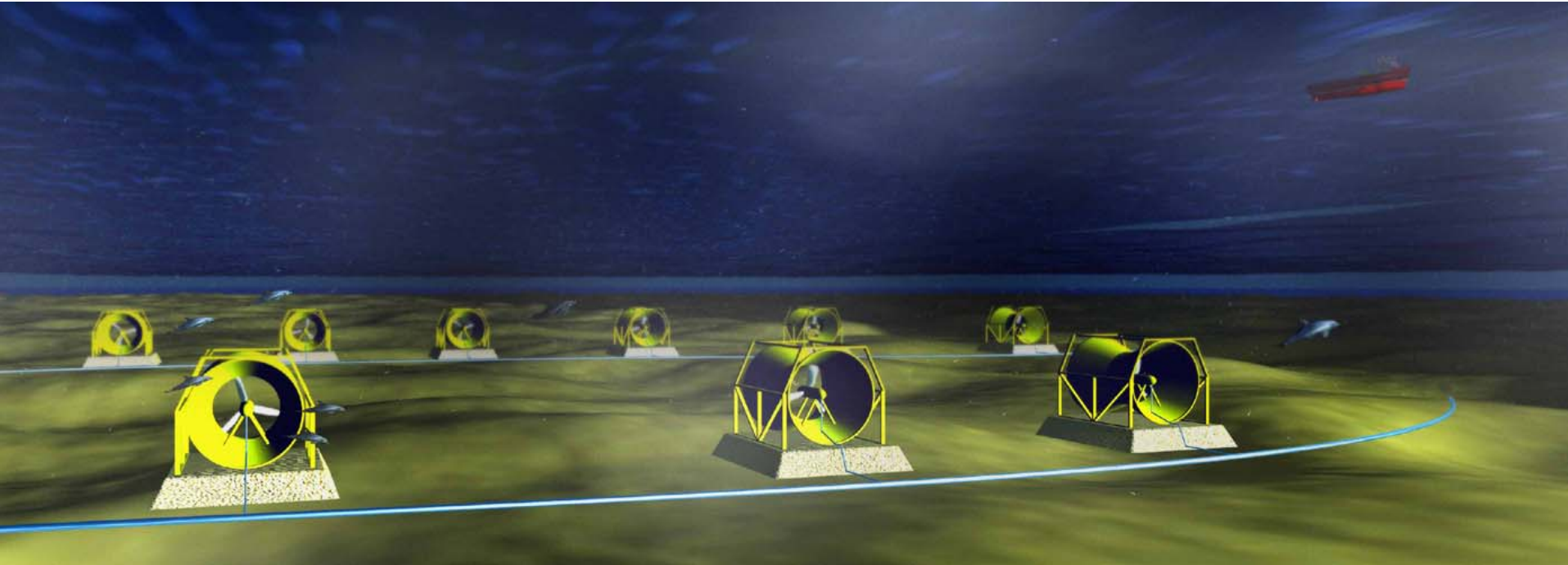
Presented by:

---

Simon Meade  
Chief Executive Officer



**Lunar Energy**  
harnessing tidal power



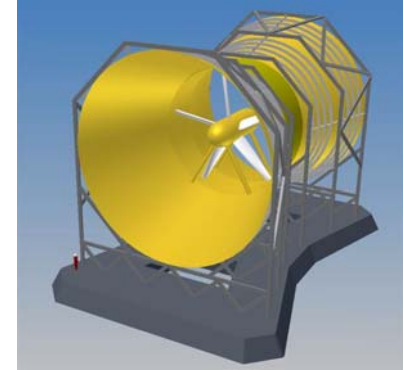
© Lunar Energy Limited 2004

predictable • invisible • economic

# Overview

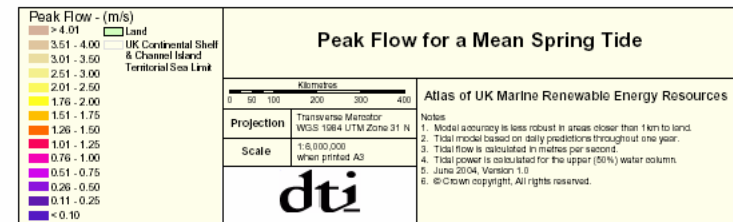
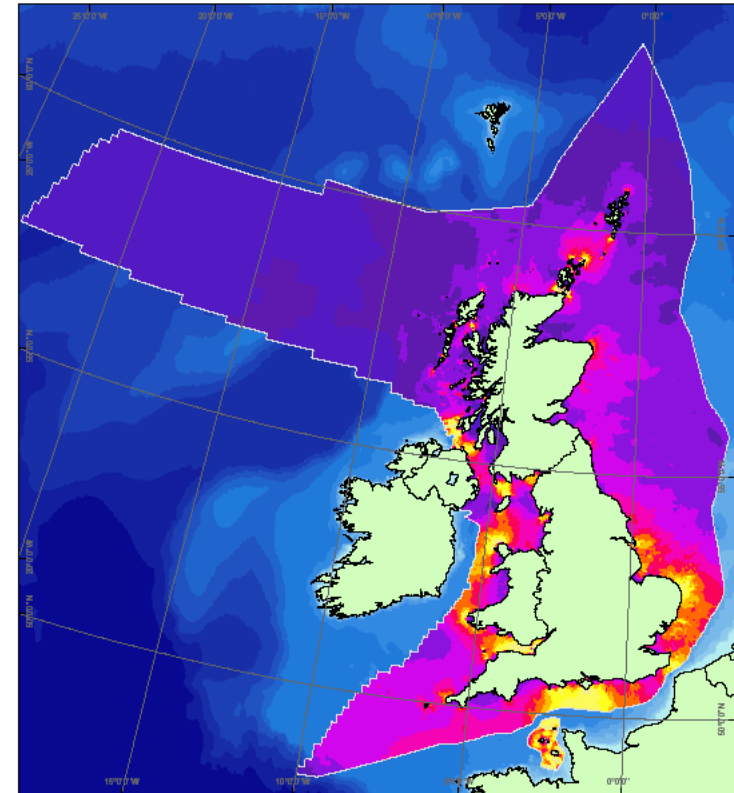
---

- New Market Opportunity
  - UK leading due to government drivers
- Predictable Power Generation
  - Good contract terms with power utilities
- Simple Robust Technology
  - Fast to market
- Current Investment Rounds would allow:
  - Complete field trials
  - Position business with first commercial projects closed
  - Trade sale or IPO as exit
- Seeking Strategic Partners
  - Route into UK/EU market
  - Gain experience ready for worldwide market



# Why Tidal Energy?

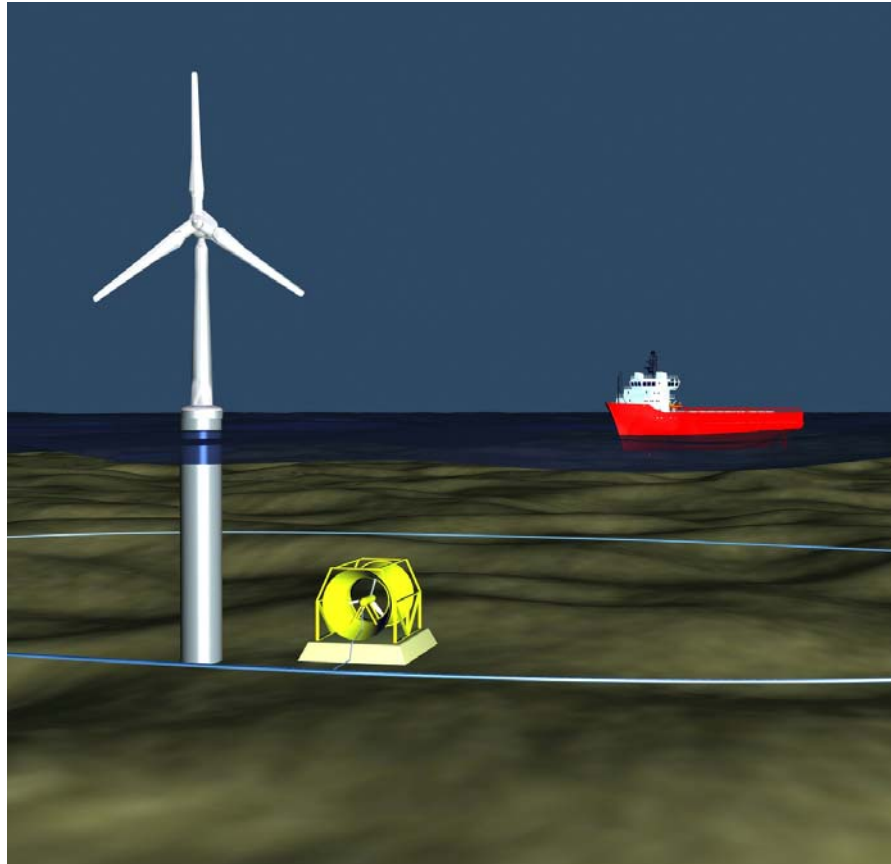
- Predictable - gravitational forces
  - Not weather related unlike wave & wind
- 40 TWh/y UK & Europe extractable resource (Black & Veatch 2004)
  - UK total demand 350TWhr – \$32bn/y revenue market
  - UK wind – approx 5 TWh/y – c.>\$3bn
- Predictability = better terms for Power Purchase Agreement contracts than other Renewables
- UK government financial incentives – specific focus for marine renewables
  - Security of supply
  - 50% of wind turbine sites rejected - radar issues
  - Initial \$90M UK government commitment for pre-commercial support
- Sub sea location removes environmental and social impact
  - C.f bio-mass, wind, solar, wave, etc.



3

# Why Tidal Energy?

---



# Why Lunar Energy?

---

- Based on existing proven, commercially available components and procedures
- Standard, proven North Sea Oil installation and maintenance operations
  - Challenge of limited intervention
- Utilisation of existing technology enables
  - Low cost product compared to competitors (5¢/kWh)
  - Fast time to market - c.3years
  - Validated by key industrial & energy players

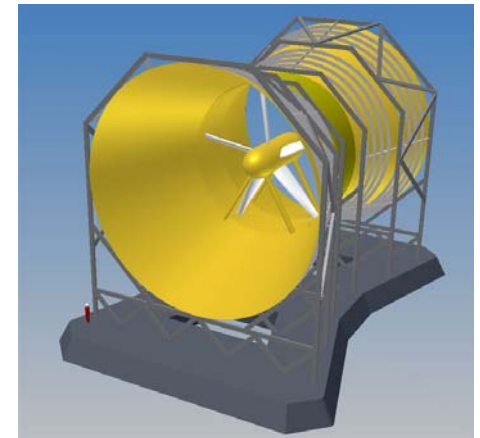




# Why Lunar Energy?

---

- Technology development outsourced to Rotech:
  - Developers & Suppliers - Specialist sub sea & Oil & Gas equipment
  - Experienced in Off shore operations
  - Fabricator to off-shore oil and gas markets
- Technology protected by international patents applications
- Lunar Energy owns exclusive, world wide, in perpetuity licence
- Established high calibre commercial team



# The Team

---

- **William Law**

- 35 Years Board level Management
- 10 years in Energy
- Devised, Developed EPRL (UK's largest Biomass company)



- **Alan Young**

- Director of Operations John Brown Engineering Ltd (1982-89)
- Set up 60 Power Stations Worldwide
- Commercial Director Scottish Hydro (89-94)
- Commercial Development Director



- **Simon Meade**

- 20 Years RAF -
- Chief Operations Officer – Harrier Squadron
- Annual operating Budget (£5M) and assets (£300M)
- Leader of Red Arrows (Blue Angels, Thunderbirds) –
- Overseen Development of Lunar since 2002



- **Guy Machpherson-Grant**

Corporate Lawyer, VC (Bamboo) City of London

- **Dr Hector Susman**

2 Degrees in Engineering - Product Development & Innovation

- **Dr David Thompson**

Fluid Dynamics and Turbine Design

- **Donald Stewart**

Computational Fluid Dynamics, Mechanical Engineering

- **Martin Graham**

Civil Engineering and Design

- **Ken Stewart**

MD Rotech – Chartered Accountant

# Why Lunar Energy?

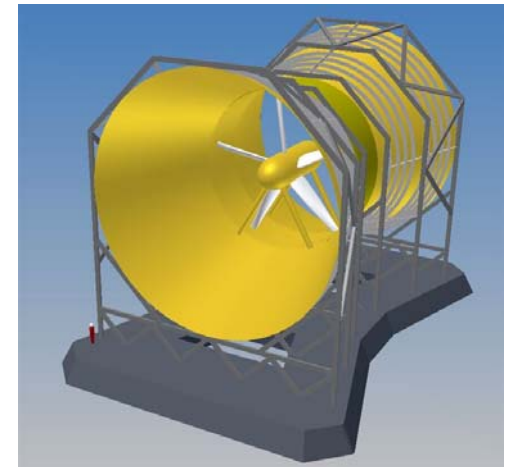
## Rotech's Dredging System

- Electricity on ship
- Drives hydraulic pump
- Pressure drives hydraulic motor in Aquaflow
- Rotates turbines
- Creates flow (8,000 litres per second at 6m/s)



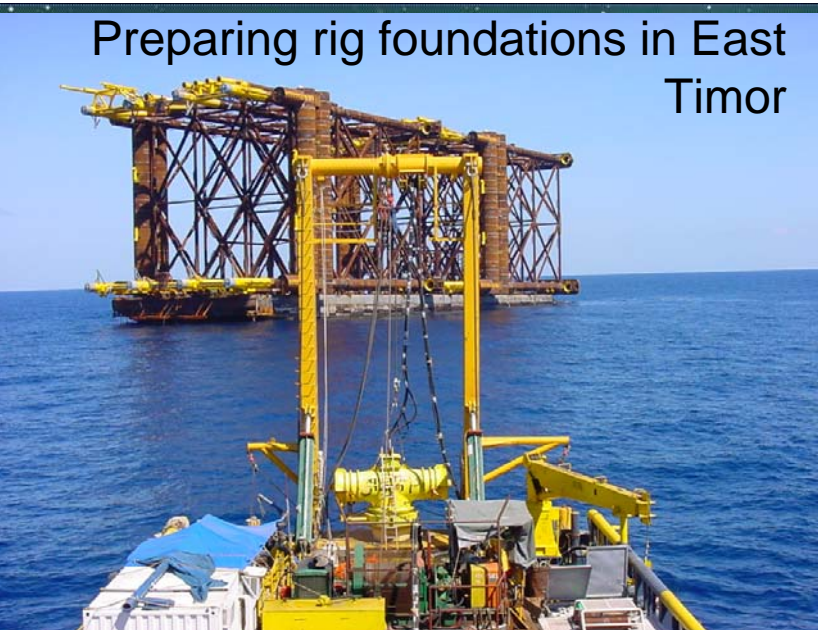
## Rotech Tidal Turbine

- Tidal Stream flow
- Rotates turbine
- Turns hydraulic pump
- Pressure drives hydraulic motors
- Drives generator
- Electricity

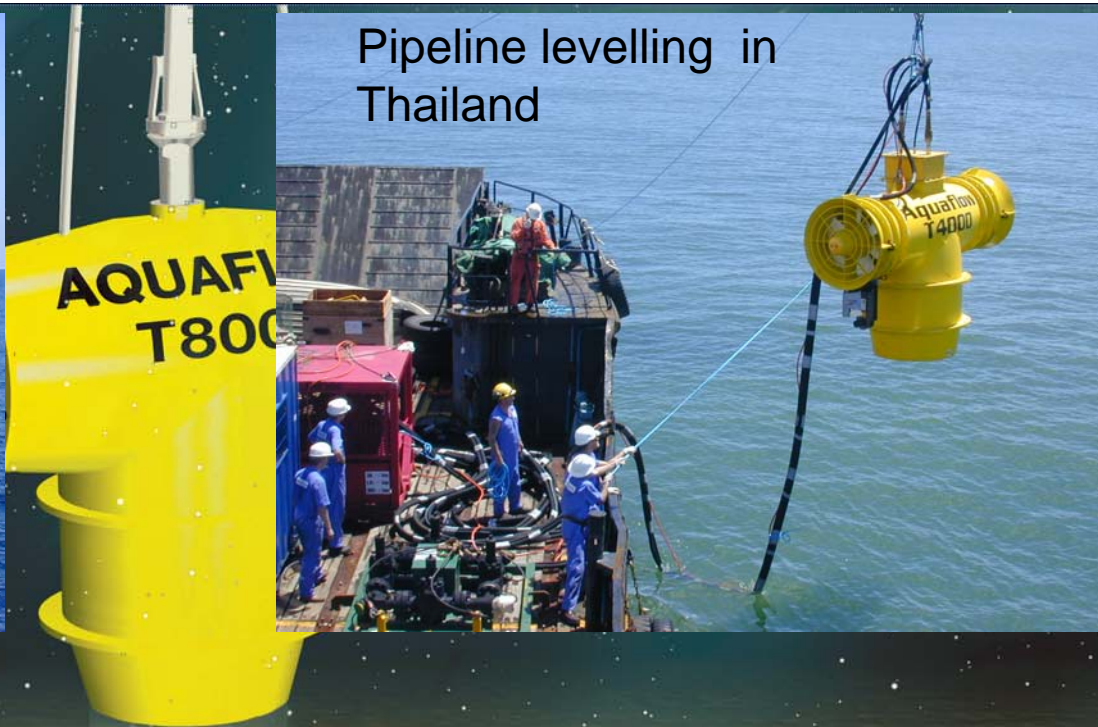




Preparing rig foundations in East Timor



Pipeline levelling in Thailand



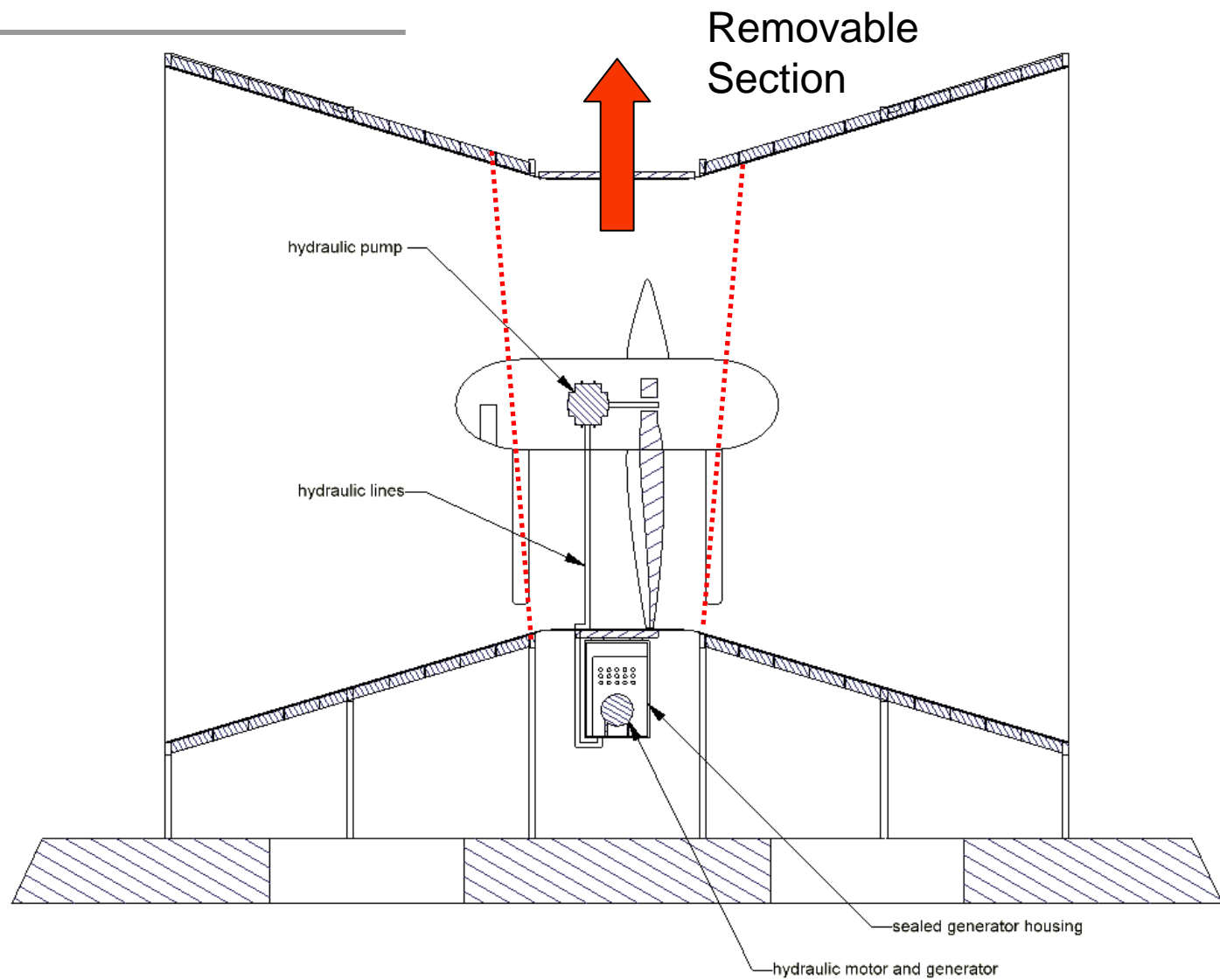
Pipeline burial in Mexico



Fibre-optic cable burial  
North Sea



# Rotech Tidal Turbine



# Commercialisation Plans

---

- UK government funding to date of \$1.8M
- Other Private Investor funding of \$1.2M
- Engineering programme to 1/20th completed and results validated
- Short listed by UK government for c.40% prototype grant funding (c\$4.4M)
- Test facilities available and funded by UK & EU
- Current Investment Round will:
  - Match funding with UK government to produce and install prototype
  - 12 month test and optimisation programme
  - Identify first 4 100MW UK commercial sites - obtain consents on 3
  - IPO/Trade Sale funds commercial projects
- UK Energy Producer
  - Licences in UK & Overseas
- By 2016 >\$180M/y from 700 MW installed
  - Energy \$4.5/MWh, Renewable Obligation Certificates \$9/MWh, Climate Change Levy Exemption Certificates @ \$6/MWh
  - Plus Governments early (50MW?) deployment support (\$18/MWh)?



# Opportunity

---

Major opportunity to invest in a high profile major growth market sector, with significant UK and EU government investment, based on robust proven technology

***“The Panel accepts the design philosophy of using a ducted turbine and continues to see the attractiveness of Lunar Energy’s concept as becoming a potentially commercially competitive option for generating electricity”***

UK Department of Trade and Industry Technology Development Oversight Panel

July 2004

Presented by:

---

Simon Meade  
CEO

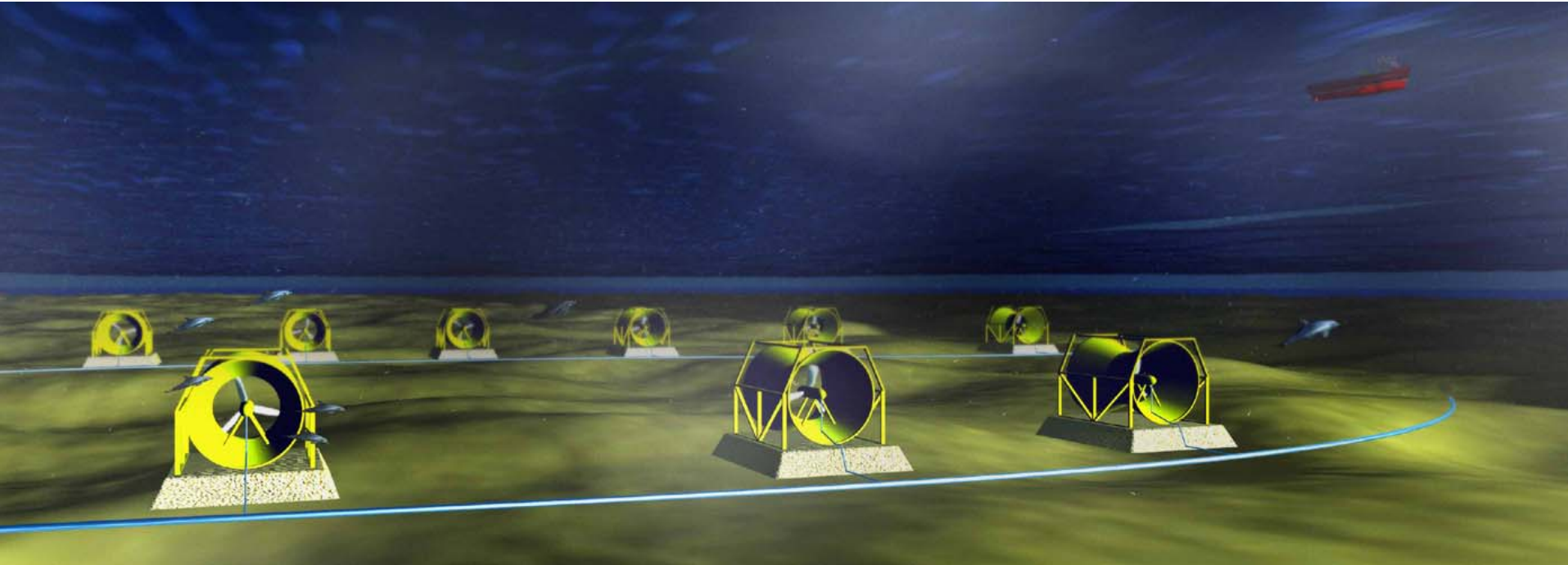
+44 7900 903575

simon.meade@lunarenergy.co.uk  
www.lunarenergy.co.uk



# Lunar Energy

harnessing tidal power



© Lunar Energy Limited 2004

predictable • invisible • economic